

REMARKS

The rejection of claim 13 under 35 USC 112, second paragraph, as being indefinite is now moot in that claim 13 has been cancelled.

The rejection of claims 1-8, 11 and 13-25 under the judicially created doctrine of obviousness-type double patenting over claims 1-13 of U.S. Patent No. 6,139,651 (Bronfin, et al) is respectfully traversed.

Claim 1 has been amended to restrict the Sr range to between .2 to 1.4 weight % strontium. This is supported in Tables 1 and 4 in the specification. The beryllium range in claim 1 is also limited to between 0 to 0.0005 weight %. In sharp contrast, U.S. Patent 6,139,651 specifically teaches not to exceed .2% strontium and teaches a beryllium content of from 0.005 to 0.0015ppm. Accordingly, the strontium range as now claimed in claim 1 exceeds the strontium percentage set forth in Bronfin '651 and the beryllium concentration is substantially lower than the concentration of beryllium in U.S. Patent 6,139,651. Moreover, claim 1 is limited to calcium and strontium exceeding 0.9 weight %. Accordingly, the rejection of claims 1-8, 11 and 13-25 as being patentably not distinct from claims 1-13 of Bronfin '651 should be withdrawn.

The rejection of claims 1-6, 11, 13-25 under 35 USC 102(e) as being clearly anticipated by Bronfin '651 is respectfully traversed.

As indicated heretofore, claim 1 has been amended limiting the strontium to between 0.2 to 1.4 weight % as supported in Tables 1 and 4 of applicants' specification. Bronfin, et al '651 on the other hand does not allow more than 0.2 % of strontium. In accordance with applicants' composition, the increased Sr content imparts to the alloy good creep resistance combined with good die castability in terms of reduced susceptibility to die sticking and hot pairing. Moreover, claim 1 has been amended as indicated above to limit the beryllium content to essentially a beryllium-free alloy whereas Bronfin, et al requires a beryllium of from 0.005 to 0.0015ppm. Furthermore, claim 1 is limited to calcium and strontium exceeding 0.9 weight %.

For all of the above reasons, the rejection of claims 1-6, 11 and 13-25 as clearly anticipated by Bronfin, et al should now be withdrawn.

The rejection of claims 1-6 and 11-25 under 35 USC 102(e) as being clearly anticipated by Ohori, et al (U.S. 2001/0023720) is respectfully traversed.

Claim 1 has been amended so that it is clear that strontium is present only in a narrow range of 0.2 to 1.4 weight % which is not taught in Ohori and that the elements Mn, Ca and earth elements have narrower ranges than as taught in the present application and the total amount of Ca and Sr must exceed 0.9 weight %. Accordingly, the rejection of claims 1-6 and 11-25 based on anticipation in view of Ohori, et al should be withdrawn.

The rejection of claims 7-8 under 35 USC 103(a) as being obvious over U.S. Patent 6,139,651 (Bronfin, et al) is respectfully traversed.

Claim 7 is a dependent claim which depends from claim 1, limiting aluminum to a very narrow range of between 7.8 to 8.8 weight % and limiting the elements zinc, calcium, strontium and the rare earth elements as well as manganese to very narrow ranges. In contrast, Bronfin does not teach an aluminum concentration limited to this very narrow range. Instead, Bronfin teaches aluminum within a very wide range extending from 6 to 8.9 %. Moreover, Bronfin as explained earlier does not teach an essentially beryllium-free alloy and claim 1 of the subject application teaches strontium in a concentration which starts from 0.2 weight % with the concentration of calcium and strontium exceeding 0.9 weight % whereas Bronfin, et al specifically teaches that the concentration of strontium should not exceed 0.2 weight %. In accordance with the subject application, higher strontium content improves creep behavior. This is not obvious from the teaching of Bronfin, et al. Claim 8 is dependent upon claim 7.

For all of the above reasons, claims 7 and 8 are clearly patentable over the teaching of Bronfin, et al.

Claims 7-10 have been rejected as obvious under 35 USC 103(a) over U.S. 2001/0023720 to Ohori, et al as was applied to claims 1-6 and 11-25.

Claims 7-10 depend from claim 1 and in the Ohori document, aluminum is required to be lower than 6% as indicated in paragraph 0048 of Ohori, on page 3, which warns against exceeding 6%. Accordingly, a person skilled in the art would not be motivated to use an aluminum content of 7.8 to 8.8 weight % as set forth in claim 7. Accordingly, claim 7

is clearly patentable over the teaching of Ohori, et al under 35 USC 103(a) and the rejection thereof should be withdrawn.

Although claim 9 has a narrower range of aluminum within the teaching of Ohori, et al, the concentration in claim 9 of strontium starts from 0.7 to 1.4 weight % which is substantially above the range taught in Ohori, as indicated in paragraph 0057 thereof. Accordingly, claims 9 and 10 are believed to be patentable over Ohori and the rejection thereof should be withdrawn.

Claims 1-6 and 11-25 stand rejected under 35 USC 103 as being unpatentable over U.S. Patent 6,342,180 to Lefebvre, et al. This rejection is respectfully traversed.

The Lefebvre patent is a very complex teaching in which the invention is defined in relation to a mean particle size in certain ranges, having little relevance to the subject invention. In addition, the alloys taught in Lefebvre are free of rare earth elements and the preferred ranges for calcium and strontium are different from the ranges taught in the subject application and provide for a sum of these elements which is lower than 0.9%. If one skilled in the art were to follow the requirements as set forth by Lefebvre, it is not possible to reproduce the alloy composition as claimed in claim 1 in which the total amount of calcium and strontium is higher than 0.9 weight %.

The rejection of claims 1-6 and 9-25 under 35 USC 103 as being unpatentable over EP 1,127,950 is respectfully traversed.

Applicants believe that the ratios between Al, Ca and Sr for the embodiments of Table 1 in EP 1,127,950 will provide insufficient die castability. Moreover there is nothing in the EP document which teaches a strontium concentration of 0.2 to 1.4 weight % as set forth in claim 1 and, more particularly, a concentration of strontium between 0.7 to 1.4 % as set forth in claim 9. Moreover, there is no teaching in EP 1,127,950 of a total amount of calcium and strontium which must be higher than 0.9 weight % which the subject application teaches on page 8, line 3, as being necessary to suppress the formation of β -phase, $Mg_{17}(Al,Zn)_{12}$ into metallic compounds. Furthermore, there is nothing in the EP teaching that would lead one skilled in the art to limit the beryllium content. Accordingly, claims 1-6 and 9-25 are clearly patentable over EP 1,127,950.

The rejection of claims 1-25 under 35 USC 103 as being unpatentable over JP-06200348 is respectfully traversed.

As for JP-06200348, it claims compositions that seem to contradict the usual principles of physical metallurgy of molten and solid magnesium alloys. For example, a mixture containing 9.5% Al, 1.0% Zr, 0.5% Mn, and 5.5% Y, that is in the ambit of this document, can hardly create an alloy, since the combinations of Al-Zr, Zr-Mn, Al-Y are interfacing elements and cannot be dissolved and kept as a solution in the molten Mg or in the solid Mg. It is believed that the cited document, contradicting the accepted metallurgic rules, is not only too exotic to teach a skilled person alloys of the instant application, but relates to compositions that are clearly out of ambit of the instant application. In the JP document, the concentrations of lanthanoids, Ca, Mn, and Zr are too high; Al and Zn are not present simultaneously, aluminum may be replaced by silver; Sr may be replaced by scandium as high as 10 weight %; etc.

For all of the above reasons, claims 1, 4-12, 14, 15, 17, 21 and 24-25 are clearly patentable over JP-06200348 and this rejection should be withdrawn.

Reconsideration and allowance of claims 1, 4-12, 14, 15, 17, 21 and 24-25 is respectfully solicited.

Respectfully submitted,



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